Express Mail Label No. EV 655366957 US
Application No. 09/621,830
Atty. Docket No. 4811-9

REMARKS

Reconsideration and reexamination is requested in view of the above amendments to the claims and the following remarks. Applicant request that the Attorney Docket number be changed from D.N. 7167 to 4811-9. Independent claims 1, 18, and 26 have been amended and new claims 54-60 have been added. Claims 2-4, 19-23, 25, 27, 29-32, 35-38, 41, 44-46, 48, and 50-53 have been amended to for consistency with the amended independent claims. Support for the amendments to the claims and new claims can be found in the Specification, as originally filed, for example, at page 5, line 15 to page 7, line 15, and Figs. 3 and 5. In addition, Claims 24, 28, 43, 47, and 49 have been canceled. Accordingly, Claims 1-4, 18-23, 25-27, 29-42, 44- 46, 48, and 50-60 are currently pending in this application.

1. New Matter Objection And 35 U.S.C. 112 Rejections

a. "fringe material"

The Examiner objects to the Amendment, filed on January 8, 2003, under 35 U.S.C. 132(a) because the Examiner contends the following sentence added at the end of the paragraph at page 6, line 10, is new matter: "As shown in Fig. 3, a fringe material 50 can be applied to peripheral edges of the flocked release sheet 1 or substrate 15 during this manufacturing process." Similarly, the Examiner rejected claims 40 and 42 under 35 U.S.C. 112, first paragraph, because, according to the Examiner, the phrase "comprising a fringe material extending outwardly from peripheral edges of the substrate" is not supported by the specification.

Applicant respectfully disagrees with the Examiner's position. While the Examiner notes that the original Fig. 3 did not identify the fringe material by reference numeral 50, the original Fig. 3 did indeed identify a fringe material. Also, while the Examiner contends that the specification as originally filed never discussed a "fringe material," Applicant notes that there is no requirement that the "fringe material" be specifically discussed in the specification if it is disclosed in the drawings. For example, *see* MPEP 2163.02, "[a]n applicant shows possession of the claimed invention by

describing the claimed invention with all its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). Fig. 3 clearly illustrates a fringe material extending from the peripheral edges of the flocked release sheet.

Furthermore, the Examiner states that "while Fig. 3 may show a 'fringe material,' without any recitation in the specification to fringe, Fig. 3 can also be interpreted as an exaggerated view of the edges of flocked surface of the transfer." Applicant submits that the Examiner's position is incorrect. The proper query is what the specification reasonably conveys to the artisan, not what it may convey to the Examiner. *See* MPEP 2163.02. It is therefore improper for the Examiner to suggest that Fig. 3 may be an exaggerated view of the edges of flocked surface of the transfer. Instead, the proper query is what Fig. 3 would convey to one skilled in the art. Applicant submits that one skilled in the art would readily appreciate that Fig. 3 illustrates a transfer to be contacted with a thermosetting sheet and that the transfer of Fig. 3 has flock adhered to a periphery of the transfer 1 since there is no indication (by dotted lines, or otherwise) that flock adhered by release agent to a bottom side of the transfer 1 is being shown as extending into a body or interior of the transfer 1. If such were the case, Fig. 3 would properly show dotted lines illustrating that the flock fibers extending from the periphery have an opposing end which extends into the interior of the transfer 1. Accordingly, there is ample support in the specification for the addition of the sentence at page 7, line 24 and Claims 43 and 45.

b. "thermoplastic adhesive or a thermosetting adhesive"

The Examiner objects to the amendment, filed Feb. 9, 2004 under 35 U.S.C. 132(a) as introducing new matter into the disclosure. The Examiner contends the amendment changes the scope of the invention to describe two embodiments wherein either a thermoplastic adhesive or a thermosetting adhesive is employed as the permanent adhesive. Applicant has deleted reference to the alternate embodiments (i.e. hot melt or thermosetting adhesive film) above.

c. "at least most of the plurality of flock fibers are in contact with the thermosetting sheet

In addition, the Examiner rejected Claims 44 and 46 under 35 U.S.C. 112, first paragraph as containing new subject matter. According to the Examiner, the specification does not clearly support the limitation that "at least most" of an adjacent surface of the transfer is in direct physical contact with the thermosetting film. Applicant respectfully disagrees with the Examiner's position. Claims 44 and 46 require that the plurality of flock fibers are in direct physical contact with the thermosetting sheet. There is ample support in the specification for these limitations. For example, one skilled in the art would readily appreciate by reference to Fig. 3 that, in one embodiment, the transfer 1, thermosetting sheet 13, and the substrate 15 are of a substantially similar size and shape. Thus, when each of the components are brought into contact with another of the components as described at page 15, line 15 to page 7, line 15 and Fig. 3, at least most of the plurality of flock fibers on the underside of the transfer 1 must be in direct contact with the thermosetting sheet. Therefore, the specification provides support for the subject matter of Claims 44 and 46. Applicant requests the rejections under 35 U.S.C. 112, first paragraph, and the objection under 35 U.S.C. 132 be withdrawn.

2. Double Patenting Rejections

The Examiner provisionally rejected Claims 1-4 and 18-53 under the judicially created doctrine of obviousness-type double patenting over Claims 1-14 and 29 of copending Application No. 10/670,091 (US 2004/0058120) (4811-9-CON). A suitable terminal disclaimer is enclosed herewith.

3. 35 U.S.C. 103 Rejections

Claims 1-4, 18-39, 41, and 43-53 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,687,527 to Higashiguchi (Higashiguchi) in view of U.S. Patent No. 4,810,549 to Abrams. Applicant respectfully traverses the rejections for the following reasons.

First, it is important to understand that the product produced by the claimed invention is substantially different from the products produced by the prior art. In other words, because there are significant differences in the manufacturing processes of the claimed invention and known processes, the resulting products are also novel and nonobvious over known products produced by such known processes. In one embodiment of the present invention, as shown in Fig. 5 of the present specification, a continuous web of a transfer 1 (having a release sheet, a release agent, and flock adhered to the release agent), a thermosetting sheet 13, and a substrate 15 can be brought into contact with one another in a continuous process to provide a flocked article having flock adhered directly to a substrate by a pre-formed, solid, and self-supporting thermosetting sheet. In one embodiment, the release sheet has a plurality of flock fibers oriented substantially perpendicular to the release sheet and at least substantially all of these flock fibers contact the thermosetting sheet (Claim 1) or at least most of the flock fibers are substantially perpendicular to the upper and lower surfaces of the thermosetting sheet and the release sheet (Claim 18). In another embodiment, at least substantially most of the free flocked surface is adhered to the thermosetting sheet (Claims 18 and 26). By doing so, the resulting products have numerous advantages over the prior art. For example, the products of the claimed invention provide a uniform distribution of adhesive across the substrate, avoid the danger of the vapors associated with known liquid adhesives, enable the transfer product to be sold independently of the substrate to which it may be ultimately adhered to, eliminate the need for a binder adhesive, and the claimed invention enables an in-line, continuous process, thereby saving considerable expense and resources.

In contrast, the prior art teaches at least three different methods to produce products having substantially different characteristics than the claimed products of the present invention. A first method is to spray a patterned adhesive onto a substrate to pattern the adhesive in a desired design, thereafter apply a flocked paper to the adhesive, apply heat, and remove the flock paper and flock which is not contacted by the patterned adhesive. Higashiguchi, for example, in Figs. 1 and 2 and at col. 1, line 56 to col. 2, line 12, discloses that in some conventional methods, a hot-melt

thermosetting synthetic resin is used as the patterned adhesive for transplanting flock planted on the flocked paper 6 to the fabric substrate. After applying heat, the paper is peeled off and "there appear portions of the flock transplanted on the fabric 8 at which the hot melt adhesive 2 has impregnated to and dried and hardened at the roots of the flock..."

A second method is to instead screen print an adhesive onto a substrate to pattern the adhesive as taught by Higashiguchi, for example. Briefly, Higashiguchi teaches a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. Thereafter, a flock sheet or mount is applied endways to the adhesive layer by pressing with heat the flock fibers against the adhesive layer in the design pattern. Subsequently, the flock sheet is peeled off the substrate surface to transfer the bonded flock fibers from the flock sheet to the substrate. See Higashiguchi, col. 3, lines 5-18 and col. 4, lines 44-59.

A third method is to spray the adhesive onto the flock as taught by Abrams, for example. Abrams teaches printing a release adhesive on a base sheet in a predetermined design. Thereafter, different color flock is sequentially flocked into its designated part of the adhesive design, separated from each other by screens. The flock is then coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, i.e., a hot melt, for binding the transfer to a substrate. *See* Abrams, col. 2, lines 16-24 and 55-61.

Numerous deficiencies exist with respect to each of the above methods and the resulting articles they produce. First, at least the processes of spraying the adhesive in a pattern on the substrate (Higashiguchi, Figs. 1 and 2) or on the flock (Abrams) produces an article having a substantially non-uniform deposit of adhesive. For example, prior art Figs. 1-2 of Higashiguchi clearly illustrate a sprayed adhesive which forms non-uniform globules of the adhesive on the substrate. This is highly undesirable. Instead, a uniform distribution of the adhesive is desired because when the distribution of adhesive is substantially uniform on the substrate, the depth to which the flock fibers are imbedded in the adhesive can also be more accurately controlled and

reduced. By exposing more of the flock fibers, decreasing the depth to which the flock fiber is embedded in the adhesive, and ensuring the flock fibers are of a similar length, a softer flocked final product can be provided. An article manufactured by spraying the adhesive on the substrate as shown by Fig. 1 of Higashiguchi, for example, would have a non-uniform distribution of adhesive.

Second, when the adhesives are in the form of a liquid, which they must be to apply the adhesive by spraying or by coating as in each of the methods discussed above, such adhesives are known to include airborne particles that are volatile and flammable which are known to contain a substantial amount of volatile organic compounds (VOC's) and which can provide difficulties in complying with EPA and OSHA regulations. The flammability of the solvents is of particular concern and danger when mixed with electrostatic flock. As a result of these substantial health, compliance, and safety concerns, prior to the present invention, the use of thermosetting adhesives decreased substantially despite their desirable thermal and adhesive properties. However, the use ~~of a pre-formed, solid, and self-supporting~~ thermosetting sheet in the present invention enables the use of thermosetting adhesives without the health, compliance, and safety concerns previously associated with such adhesives.

Third, when the adhesives are screen printed on the substrate as taught by Higashiguchi, for example, the resulting products cannot be sold independently of the substrate to which the flock is adhered. Thus, such processes cannot produce the flocked transfer product that can be sold and shipped separately from the substrate to which may eventually be adhered to. This is a substantial deficiency of the prior art. In contrast, the flocked transfer of the claimed invention can be sold independently as a transfer or can be sold adhered to a substrate.

Fourth, screen printing or spraying an adhesive onto a substrate or a release sheet in a predetermined pattern generally renders such processes incapable of being an in-line, continuous process because the liquid adhesive generally cannot be repetitively applied to the substrate, the above methods are incapable of producing articles on a continuous basis as in the present invention.

As a result of the substantial differences between the process of the present invention and known processes, neither Higashiguchi nor Abrams teach or suggest, individually or collectively, the resulting product of the process of the present invention, including at least the following italicized language in each of the following independent claims as amended.

1. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;
a plurality of flock fibers on the release agent, the flock fibers being formed in a desired pattern on the release sheet and being substantially perpendicular to the sheet, the release agent holding the flock fibers to the release sheet;
a pre-formed, solid, and self-supporting thermosetting sheet, wherein at least substantially all of the flock fibers, oriented substantially perpendicular to the release sheet, contact the thermosetting sheet;
and wherein there is no binder adhesive positioned between the thermosetting sheet and the flock.

18. A flocked transfer assembly, comprising:
a release sheet;
a release agent on the release sheet;
flock on the release agent; the flock being formed in a desired pattern on the release sheet, the release agent being located between the flock and the release sheet and holding the flock to the release sheet; and
a pre-formed, solid, continuous, and self-supporting thermosetting sheet engaging free ends of the flock, the flock being located between the release agent and the thermosetting sheet and defining a free surface, wherein at least most of the free surface of the flock is in direct physical contact with the thermosetting sheet; and
wherein the thermosetting sheet has a substantially uniform thickness and substantially flat upper and lower surfaces, and *wherein at least most of the flock fibers are substantially perpendicular to the upper and lower surfaces and to the release sheet.*

26. A flocked transfer assembly, comprising:
a release sheet;
a release agent on the release sheet;
flock contacting the release agent, the flock being formed in a desired pattern on the release sheet and defining opposing first and second surfaces, the release agent contacting the first surface and holding the flock to the release sheet;

a pre-formed, solid, and self-supporting thermosetting sheet having a first side engaging free ends of the flock and a second side; and

a substrate adhered to a second side of said thermosetting sheet;

wherein at least substantially most of the second surface is adhered to the thermosetting sheet; and

wherein there is no binder adhesive positioned between the flock and the substrate.

Higashiguchi

Higashiguchi teaches a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. Thereafter, a flock sheet or mount is applied endways to the adhesive layer by pressing with heat the flock fibers against the adhesive layer in the design pattern. Subsequently, the flock sheet is peeled off the substrate surface to transfer the bonded flock fibers from the flock sheet to the substrate. As shown in Figs. 5, of Higashiguchi, a substantial amount of the flock does not contact an adhesive, let alone a pre-formed, solid, and self-supporting thermosetting sheet. Additionally, Figs. 6-7 show that a notable portion of the flock is removed from the substrate as waste with the flock sheet. See Higashiguchi, col. 3, lines 5-18 and col. 4, lines 44-59. Therefore, Higashiguchi does not teach or suggest a flock transfer wherein at least substantially all the flock fibers perpendicular to the release sheet contact the release sheet (Claim 1) or wherein the free surface of the flock is in direct physical contact with the thermosetting sheet (Claims 18 and 26).

Further, according to Higashiguchi, at col. 4, lines 32-43:

> The synthetic resins suitable for the present invention are those of self-crosslinking type or reactive crosslinking type which are used as the so-called *binders* of printing inks.
>
> As is well known, the synthetic resins used as *binders* not only have the function of binding the pigments together which constitute the ink, but also impregnate the fibrous tissues such as papers and cloths constituting the surface to be printed, and hold together these fibrous tissues and the pigments printed on the surface of the tissue, thereby assuring good adherence therebetween.
> (Emphasis added).

Thus, Higashiguchi also fails to teach a transfer having no binder adhesive (see col. 4, lines 32-43 of Higashiguchi) between a pre-formed, solid, and self-supporting thermosetting sheet and the flock or between the flock and a substrate.

Moreover, Higashigushi's teaching of only applying adhesive onto a substrate to pattern the adhesive in a desired design teaches away from Claim 26. In one embodiment of the claimed invention, the flocked transfer does not include adhesive in a patterned design, but instead is a flocked transfer that may thereafter be cut into a desired pattern. One skilled in the art upon a reading of Higashiguchi would not be motivated to form a flocked transfer assembly wherein at least substantially most of a second surface of the flock is adhered to the thermosetting sheet (Claim 26) as doing so would not only result in waste of the flock, but also would result in waste of the adhesive when cutting the transfer to a desired shape or pattern. First, Higashiguchi does not teach or suggest a pre-formed, solid, and self-supporting thermosetting sheet as claimed. In addition, Higashiguchi teaches that its adhesive should be applied only in a pattern and thus substantially most of a second surface of the flock is not adhered to an adhesive (thermosetting sheet) as claimed.

Abrams

Abrams is directed to a multicolor flock transfer comprising a base sheet having a surface area coated with a release adhesive, precolored flock of at least two different colors that are longer than 0.3 mm having ends adhering to the surface area in the form of predetermined color patterns of a design, and a binding adhesive applied to other ends of the precolored flock, whereby the predetermined color patterns of the design of the multicolor flock are adapted to be transferred onto a product. *See* Claim 1 of Abrams. Further, according to Abrams at col. 2, lines 55-68, "[t]he flock 8 is coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, a hot melt, for binding the transfer to a substrate..." (Emphasis added). As shown in Fig. 2 of Abrams, the hot melt surface 12 is placed against the textile 14, thereafter heat and pressure are applied to the release sheet 4 in order to bond the transfer to the substrate. As a result of the binder being applied to the flock, the flock will not be

perpendicular to the release sheet or adhesive after applying pressure and heat to adhere the flock to a substrate. The release sheet 4 with the adhesive 6 is then pulled away from the flock 8 to permanently affix the transfer to the substrate.

Dependent Claims

The dependent claims provide further reasons for allowance.

Dependent Claim 2 requires that the transfer is adhered to a substrate and that there is no hot melt adhesive contacting the thermosetting sheet.

Dependent Claim 3 requires that the transfer is adhered to the substrate using the thermosetting sheet. (*See also* Claim 28).

Dependent Claim 4 requires that the thermosetting sheet is a thermosetting sheet is a thermosetting polyurethane film or a thermosetting polyester film. (*See also* Claims 20, 29, and 36).

Dependent Claim 19 requires that the release agent and release sheet are located on a first surface of the flock and that the thermosetting film sheet is positioned on a second surface of the flock and the first and second surfaces are in an opposing relationship.

Dependent Claim 21 requires that the thermosetting sheet is precut to correspond to a shape of the transfer. (*See also* Claim 37).

Dependent Claim 22 requires that the thermosetting sheet is cross-linked and that the thermosetting sheet is not in contact with a hot melt adhesive.

Dependent Claim 23 requires that the thermosetting sheet is adhered to the flock and there is no binder adhesive located between the thermosetting sheet and the flock.

Dependent Claim 25 requires that the thermosetting film is not fully cross-linked. (*See also* Claim 34).

Dependent Claim 27 requires that there is no hot melt adhesive between the flock and the substrate.

Dependent Claim 30 requires that the thermosetting sheet is in direct contact with the flock fibers.

Dependent Claim 31 requires that the thermosetting sheet is cross-linked and wherein the thermosetting sheet is adhered to the free surface of the flock in the absence of a binder adhesive.

Dependent Claim 32 requires that there is no binder adhesive located between the thermosetting sheet and the flock. (*See also* Claims 38 and 53). As discussed previously, both Higashiguchi and Abrams fail to teach a transfer having no binder adhesive positioned between the thermosetting sheet and the flock.

Dependent Claim 33 requires that the free surface of the flock is free of an acrylic adhesive.

Dependent Claim 35 requires that the flock comprises a plurality of flock fibers, that the release agent and release sheet are located on a first surface of the flock, and that the free and first surfaces are defined, respectively, by opposing ends of the flock fibers.

Dependent Claim 40 requires a fringe material extending outwardly from peripheral edges of the substrate. (*See also* Claim 42).

Dependent Claim 41 requires that the substrate is rubber.

Dependent Claim 44 requires that the flock comprises a plurality of flock fibers, wherein at least most of the plurality flock of flock fibers are in direct physical contact with the thermosetting sheet. (*See also* Claim 46).

Dependent Claim 45 requires that the free surface of the flock is in direct physical contact with the thermosetting sheet.

Dependent Claim 48 requires that the adhesive component of the thermosetting sheet consists essentially of a thermosetting material. (*See also* Claim 50).

Dependent Claim 51 requires that the thermosetting sheet comprises a thermosetting polyester. (*See also* Claims 52 and 53).

Dependent Claim 54 requires that the thermosetting sheet has a substantially uniform thickness and substantially flat upper and lower surfaces. As discussed previously, both Higashiguchi and Abrams fail to teach a thermosetting sheet having a substantially uniform thickness and substantially flat upper and lower surfaces. (*See also* Claim 55).

Dependent Claim 56 requires that substantially none of the thermoplastic sheet fails to contact the free ends of the flock. (*See also* Claims 56 and 57). As discussed previously, both Higashiguchi and Abrams teach an article having flock which is not in contact with an thermosetting sheet.

Dependent Claims 59-60 require that the thermosetting sheet is continuous.

Based upon the foregoing, Applicant believes that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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Date: February 3, 2006